WHAT IS CLAIMED IS

1. An authentication apparatus comprising:
a touch sensor detecting a plurality of coordinates, input via a specifying member which specifies a plurality of discontinuous different coordinates;
a comparing unit comparing the plurality of detected coordinates and a plurality of registered coordinates and outputting a compared result; and
an authentication unit carrying out an authentication based on the compared result.

2. An authentication apparatus, comprising:
a touch sensor detecting a plurality of coordinates, input by a pointing device, via a specifying member which specifies a plurality of discontinuous different coordinates;
a comparing unit comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and
an authentication unit carrying out an authentication based on the compared result.

3. The authentication apparatus as claimed in claim 1, wherein said specifying member specifies the plurality of discontinuous coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

4. The authentication apparatus as claimed in claim 1, which further comprises:
a judging unit judging an end of the input of the plurality of detected coordinates when an input interval -

of the plurality of detected coordinates is longer than a predetermined interval or the input interval of the plurality of detected coordinates is longer than an average value of the input interval.

5. The authentication apparatus as claimed in claim 1, wherein the specifying member is placed on a specified region of touch sensor.

6. The authentication apparatus as claimed in claim 3, wherein the holes or openings, cutouts or marks of said specifying member are provided at arbitrary positions.

7. The authentication apparatus as claimed in claim 1, wherein the specifying member is placed in a specified region which is arbitrarily movable on said touch sensor.

8. The authentication apparatus as claimed in claim 1, which further comprises:
    a registering unit registering user levels and a manager level which is common to all of the user levels, with respect to the plurality of registered coordinates, registered coordinate patterns or registered code values.

9. The authentication apparatus as claimed in claim 1, wherein said comparing unit includes a unit part obtaining the plurality of registered coordinates from positions and registered patterns, specified by one or more arbitrary ones of the detected coordinates.

10. The authentication apparatus as claimed in claim 1, wherein said touch sensor virtually sets a keyboard at a position indicated by one or a plurality of arbitrary inputs via the specifying member which is placed on said touch sensor and specifies the plurality of discontinuous different coordinates, and detects a code corresponding to each key located at a position where the one or plurality of arbitrary inputs are made based on the virtually set keyboard, and said comparing unit compares each detected code with registered codes.

11. The authentication apparatus as claimed in claim 1, wherein said touch sensor detects resistances corresponding to the coordinates input from a resistor layer type touch sensor via the specifying member, and said comparing unit compares the plurality of detected coordinates and the registered coordinates by comparing the detected resistances and registered resistances.

12. The authentication apparatus as claimed in claim 1, wherein said touch sensor is provided in display means.

13. A user authentication method comprising:
a detecting step detecting a plurality of coordinates, input via a specifying member which specifies a plurality of discontinuous different coordinates;
a comparing step comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and
an authentication step carrying out an authentication based on the compared result.

14.   A user authentication method comprising:

a detecting step detecting a plurality of coordinates, input by a pointing device via a specifying member which specifies a plurality of discontinuous different coordinates;

a comparing step comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

an authentication step carrying out an authentication based on the compared result.

15.   The user authentication method as claimed in claim 13, which further comprises:

a judging step judging an end of the input of the plurality of detected coordinates when an input interval of the plurality of detected coordinates is longer than a predetermined interval or, the input interval of the plurality of detected coordinates is longer than an average value of the input interval.

16.   The user authentication method as claimed in claim 13, wherein said specifying member is placed on a specified region on said touch sensor.

17.   A user authentication method comprising:

a detecting step detecting a plurality of coordinates, input via a specifying member which specifies a plurality of discontinuous different coordinates, with said member specifying the plurality of discontinuous coordinates by a plurality of discontinuous holes or openings, cutouts or marks;

a comparing step comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

an authentication step carrying out an authentication based on the compared result.

18.   The user authentication method as claimed in claim 17, wherein the holes or openings, cutouts or marks of the specifying member are provided at arbitrary positions.

19.   A user authentication method comprising:

a detecting step detecting a plurality of coordinates, input by a pointing device via a specifying member which specifies a plurality of discontinuous different coordinates, with said member specifying the plurality of discontinuous coordinates by a plurality of discontinuous holes or openings;

a comparing step comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

an authentication step carrying out an authentication based on the compared result.

20.   The user authentication method as claimed in claim 19, wherein the specifying member is placed in a specified region which is arbitrarily movable on a touch sensor.

21.   The user authentication method as claimed in claim 13, which further comprises:

a registering step registering user levels and a manager level which is common to all of the user levels, with respect to the plurality of registered coordinates, registered coordinate patterns or registered code values.

22. The user authentication method as claimed in claim 13, wherein said comparing step obtains the plurality of registered coordinates from positions and registered patterns specified by one or more arbitrary ones of the detected coordinates.

23. The user authentication method as claimed in claim 13, wherein said detecting step virtually sets a keyboard at a position indicated by one or a plurality of arbitrary inputs via the specifying member which is placed on a touch sensor and specifies the plurality of discontinuous different coordinates, and detects a code corresponding to each key located at a position where the one or plurality of arbitrary inputs are made based on the virtually set keyboard, and said comparing step compares each detected code with registered codes.

24. The user authentication method as claimed in claim 13, wherein said detecting step detects resistances corresponding to the coordinates input from a resistor layer type touch sensor via the specifying member, and said comparing step compares the plurality of detected coordinates and the registered coordinates by comparing the detected resistances and registered resistances.

25.   The user authentication method as claimed in claim 13, wherein a touch sensor is provided in a display unit.

26.   An apparatus, comprising:

a touch sensor;

a user authentication card which is placed on the touch sensor when making an input for user authentication, wherein the user authentication card comprises:

a plurality of perforated parts,

each of perforated parts removed by punching forming a hole which is used when making an input to the coordinate detector.
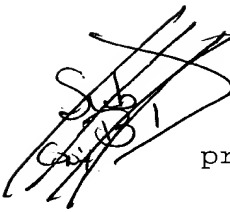

27.   The apparatus as claimed in claim 26, wherein the user authentication card further comprises:

a direction specifying unit provided at asymmetrical positions with respect to top and bottom, and right and left of the card,

said direction specifying unit being formed by at least one of a hole or opening, a cutout, a change in geometrical configuration, and a printed mark.

28.   The apparatus as claimed in claim 26, wherein said card is made of a transparent member or a non-transparent member.

29.   The apparatus as claimed in claim 26, wherein said card has a shape and size approximately identical to those of a credit card.

30. A computer readable storage medium storing a program to make a computer perform an authentication by:

detecting a plurality of coordinates, input via a specifying member which specifies a plurality of discontinuous different coordinates;

comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

authenticating based on the compared result.

31. A computer readable storage medium storing a program to make a computer perform an authentication by:

detecting a plurality of coordinates, input by a pen, via a specifying member which specifies a plurality of discontinuous different coordinates;

comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

authenticating based on the compared result.

32. The storage medium as claimed in claim 30, wherein said specifying member specifies the plurality of discontinuous coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

33. The storage medium as claimed in claim 30, wherein said authentication means makes the computer compare an order of the plurality of detected coordinates and an order of the plurality of registered coordinates and carry out the authentication based on a compared result of the orders.

34. The storage medium as claimed in claim 30, which further comprises:

judging an end of the input of the plurality of detected coordinates when an input interval of the plurality of detected coordinates becomes longer than a predetermined interval or, the input interval of the plurality of detected coordinates becomes longer than an average value of the input interval.

35. The storage medium as claimed in claim 30, wherein said specifying member is placed in a specified region on a touch sensor.

36. The storage medium as claimed in claim 32, wherein the holes or openings, cutouts or marks of said member are provided at arbitrary positions.

37. The storage medium as claimed in claim 30, wherein said specifying member is placed in a specified region which is arbitrarily movable on a touch sensor.

38. The storage medium as claimed in claim 30, which further comprises:

registering user levels and a manager level which is common to all of the user levels, with respect to the plurality of registered coordinates, registered coordinate patterns or registered code values.

39. The storage medium as claimed in claim 30, wherein said comparing obtains the plurality of registered coordinates from positions and registered patterns specified by one or more arbitrary ones of the detected

coordinates.

40. The storage medium as claimed in claim 30, wherein said detecting sets a keyboard at a position indicated by one or a plurality of arbitrary inputs made from a touch sensor via the specifying member which is placed on the touch sensor and specifies the plurality of discontinuous different coordinates, and detects a code corresponding to each key located at a position where the one or plurality of arbitrary inputs are made based on the virtually set keyboard, and said comparing compares each detected code with registered codes.

41. The storage medium as claimed in claim 30, wherein said detecting detects resistances corresponding to the coordinates input from a resistor layer type touch sensor via the specifying member, and said comparing compares the plurality of detected coordinates and the registered coordinates by comparing the detected resistances and registered resistances.

42. The storage medium as claimed in claim 30, wherein a touch sensor is provided in a display unit of the computer.

43. An authentication apparatus comprising:
a touch sensor detecting a plurality of coordinates, input via a specifying member which specifies a plurality of discontinuous different coordinates;
a comparing unit comparing an order of the plurality of detected coordinates and an order of a plurality of registered coordinates and outputting a compared result of

the orders; and

an authentication unit carrying out an authentication based on the compared result.

44.   A user authentication method comprising:
a detecting step detecting a plurality of coordinates, input via a specifying member which specifies a plurality of discontinuous different coordinates;

a comparing step comparing an order of the plurality of detected coordinates and an order of a plurality of registered coordinates and outputting a compared result of the orders; and

an authentication step carrying out an authentication based on the compared result.

45.   A computer readable storage medium storing a program to make a computer perform an authentication, by:
detecting a plurality of coordinates, input via a specifying member which specifies a plurality of discontinuous different coordinates;

comparing an order of the plurality of detected coordinates and an order of a plurality of registered coordinates and outputting a compared result of the orders; and

authenticating based on a compared result.

46.   An authentication apparatus, comprising:
a detecting unit detecting a plurality of coordinates, input from a touch sensor, via a specifying member which specifies a plurality of discontinuous different coordinates;

a comparing unit comparing the plurality of detected coordinates and a plurality of registered coordinates and

outputting a compared result; and

an authentication unit carrying out an authentication based on the compared result.

47.   An authentication apparatus comprising:

a detecting unit detecting a plurality of coordinates, input from a touch sensor by a pointing device, via a specifying member which specifies a plurality of discontinuous different coordinates;

a comparing unit comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

an authentication unit carrying out an authentication based on the compared result.

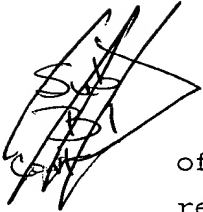48.   The authentication apparatus as claimed in claim 46, wherein said specifying member specifies the plurality of discontinuous different coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

49.   The authentication apparatus as claimed in claim 47, wherein said specifying member specifies the plurality of discontinuous different coordinates by a plurality of discontinuous holes or openings, cutouts or marks.

50.   An authentication apparatus, comprising:

a detecting unit detecting a plurality of coordinates, input from a touch sensor, via a specifying member which specifies a plurality of discontinuous different coordinates;

a comparing unit comparing an order of the plurality of detected coordinates and an order of a plurality of registered coordinates and outputting a compared result of the orders; and

an authentication unit carrying out an authentication based on the compared result.

51. The authentication apparatus as claimed in claim 46, which further comprises:

a unit judging an end of the input of the plurality of detected coordinates when an input interval of the plurality of detected coordinates becomes longer than a predetermined interval or, the input interval of the plurality of detected coordinates becomes longer than an average value of the input interval.

52. The authentication apparatus as claimed in claim 46, wherein said detecting unit virtually sets a keyboard at a position indicated by one or a plurality of arbitrary inputs made from the touch sensor via the specifying member which is placed on the touch sensor and specifies the plurality of discontinuous different coordinates, and detects a code corresponding to each key located at a position where the one or plurality of arbitrary inputs are made based on the virtually set keyboard, and said comparing unit compares each detected code with registered codes.

53. The authentication apparatus as claimed in claim 46, wherein said touch sensor is provided in a display unit.

54. An authentication apparatus comprising:

a specifying member which specifies a plurality of discontinuous different coordinates;

a touch sensor detecting a plurality of coordinates, input via said specifying member;

a comparing unit comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and

an authentication unit carrying out an authentication based on the compared result.

55. The authentication apparatus as claimed in claim 1, which further comprises;

a pointing member, and

said touch sensor detects coordinates input by said pointing device via said specifying member.

56. The authentication apparatus as claimed in claim 55 wherein said pointing device comprises pen or a stylus.

57. The authentication apparatus as claimed in claim 2, wherein said pointing device by which said plurality of discontinuous different coordinates are input comprises a pen or a stylus.

58. The user authentication method as claimed in claim 17, wherein said pointing device by which said plurality of discontinuous different coordinates are input comprises a pen or a stylus.

59. The storage medium as claimed in claim 31, wherein said pointing device by which said plurality of discontinuous different coordinates are input comprises a pen or a stylus.

60. The authentication apparatus as claimed in claim 47, wherein said pointing device by which said plurality of discontinuous different coordinates are input comprises a pen or a stylus.

61. An authentication apparatus, comprising:
a detecting unit detecting a plurality of coordinates, input from a coordinate detector, via a specifying member which is independent of said detecting unit and specifies a plurality of discontinuous different coordinates;
a comparing unit comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and
an authentication unit carrying out an authentication based on the compared result.

62. An authentication apparatus comprising:
a detecting unit detecting a plurality of coordinates, input from a coordinate detector by a pen, via a specifying member which is independent of said detecting unit and specifies a plurality of discontinuous different coordinates;
a comparing unit comparing the plurality of the detected coordinates and a plurality of registered coordinates and outputting a compared result; and
an authentication unit carrying out an authentication based on the compared result.

63. A user authentication method comprising;
a detecting step detecting a plurality of coordinates,
input from a coordinate detector, via a specifying member
which is independent of a detecting unit and specifies a
plurality of discontinuous different coordinates;

a comparing step comparing the plurality of the
detected coordinates and a plurality of registered
coordinates and outputting a compared result; and

an authenticate. on step carrying out an
authentication based on the compared result.

64. A user authentication method comprising:
a detecting step detecting a plurality of coordinates,
input from a coordinate detector by a pen, via a
specifying member which is independent of a detecting unit
and specifies a plurality of discontinuous different
coordinates;

a comparing step comparing the plurality of the
detected coordinates and a plurality of registered
coordinates and outputting a compared; and

an authentication step carrying out an authentication
based on the compared result.

65. A computer readable storage medium
storing a program to make a computer perform an
authentication comprising:

detecting a plurality of coordinates, input from a
coordinate detector, via a specifying member which is
independent of said detecting means and specifies a
plurality of discontinuous different coordinates;

comparing the plurality of the detected coordinates
and a plurality of registered coordinates and outputting a
compared result; and

authenticating based on the compared result.

66.   A computer readable storage medium storing a program to make a computer perform, comprising:

detecting a plurality of coordinates, input from a coordinate detector by a pen, via a specifying member which is independent of said detecting unit and specifies a plurality of discontinuous different coordinates;

comparing the plurality of the detected coordinates and a plurality of registered coordinate and outputting a compared result; and

authenticating based on the compared result.

67.   An authentication apparatus, comprising:

a touch sensor detecting coordinates, input via a specifying member, which specifies a plurality of discontinuous different coordinates; and

a processing unit determining a relationship between the plurality of detected coordinates and a plurality of registered coordinates.

68.   The authentication apparatus as set forth in claim 67 wherein said processing unit further comprises:

a comparing unit comparing the plurality of detected coordinates and the plurality of registered coordinates and outputting a compared result, and

an authenticating unit authenticating based on the compared result.

69.   The authentication apparatus as set forth in claim 67, wherein said processing unit further comprises:

a comparing unit comparing an order of the plurality of detected coordinates and an order of the plurality of registered coordinates and outputting a compared result of the orders, and

an authenticating unit authenticating based on the compared result.

70. An authentication method comprising:

a detecting step detecting coordinates, input via a specifying member, which specifies a plurality of discontinuous different coordinates; and

a determining step determining a relationship between the plurality of detected coordinates and a plurality of registered coordinates.

71. The authentication method as set forth in claim 70, wherein said determining step further comprises:

comparing the plurality of detected coordinates and the plurality of registered coordinates and outputting a compared result, and

authenticating based on the compared result.

72. The authentication method as set forth in claim 70, wherein said determining step further comprises:

comparing an order of the plurality of detected coordinates and an order of the plurality of registered coordinates and outputting a compared result of the orders, and

authenticating based on the compared result.

73. A computer readable storage medium storing a program to make a computer perform an authentication by:

detecting a plurality of coordinates, input via a
specifying member which specifies a plurality of
discontinuous different coordinates; and

determining a relationship between the plurality of
detected coordinates and a plurality of registered
coordinates.

74. The storage medium as claimed in claim 73,
wherein said determining further comprises:

comparing the plurality of detected coordinates and
the plurality of registered coordinates and outputting a
compared result, and

authenticating based on the compared result.

75. The storage medium as claimed in claim 73,
wherein said determining further comprises:

comparing an order of the plurality of detected
coordinates and an order of the plurality of registered
coordinates and outputting a compared result of the orders,
and

authenticating based on the compared result.